STATE OF MICHIGAN
IN THE SUPREME COURT

RONNIE DANCER and ANNETTE DANCER,

Plaintiffs–Appellants,

-vs-

CLARK CONSTRUCTION COMPANY, INC., and BETTER BUILT CONSTRUCTION SERVICES, INC.,

Defendants–Appellees.

_____/

Docket Nos. 153830, 153889
Court of Appeals Docket no. 324314
Kalamazoo Circuit Court
Hon. Pamela L. Lightvoet
LC No. 2012-0571-NO

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BRIEF AMICUS CURIAE OF MICHIGAN ASSOCIATION FOR JUSTICE

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INTEREST OF AMICUS CURIAE

The Michigan Association for Justice (MAJ) is an organization of Michigan lawyers engaged primarily in litigation and trial work. MAJ recognizes an obligation to assist this Court on important issues of law that would substantially affect the orderly administration of justice in the trial courts of this state.

STATEMENT OF QUESTIONS PRESENTED

I.

DOES WORKING AT HEIGHTS PRESENT A "HIGH DEGREE OF RISK"?

Plaintiffs-Appellants would answer "YES."

Defendant-Appellee would answer "NO."

The trial court answered "NO."

The Court of Appeals answered "YES."

Amicus curiae Michigan Association for Justice answers "YES."

STATEMENT OF FACTS

Amicus curiae accepts the statement of facts appearing in the brief of plaintiffs-appellants.

ARGUMENT I

WORKING AT HEIGHTS PRESENTS A "HIGH DEGREE OF RISK."

(a)

Working at heights is hazardous

Around the world, construction work is one of the most hazardous occupations known. As one authority put it, "[C]onstruction is very hazardous worldwide, owing to its unique dynamic nature, poor conditions and tough environment." [1]

A recent literature review of 75 studies from the United States and other countries between 1994 and 2014 noted that construction "has long been identified as one of the most hazardous industries in many parts of the world."[2] In countries as diverse as Greece[3], India[4], Japan[5], Spain[6], and the United Kingdom[7], construction accidents account for a disproportionate percentage of fatalities and other injuries.[8]

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[1] Aneziris, Topali & Papazoglou, *Occupational risk of building construction*, 105 Reliability engineering and system safety 36, 36 (2012).
[2] Nadhim, Hon, Xia, Stewart & Fang, *Falls from height in the construction industry: A critical review of the scientific literature*, 13 Int'l J Envtl Res & Pub Health 638 (2016).
[3] Goncalves, Couto & Tender, *Construction workers' training: Contributions to a more effective prevention culture*, in Arezes (ed.), Occupational Safety and Hygiene IV at 158 (London: Taylor & Francis Group, 2016).
[4] Vineet, Shruti & Dhaon, *A multi factorial analysis of the epidemiology of injuries from falls from heights*, 4(4) Int'l J Critical Illness & Injury Sci 283 (2014).
[5] Ohdo, Hino, Takanashi, Takahashi & Toyosawa, *Study on fall protection from scaffolds by scaffold sheeting during construction*, 14 Procedia Engineering 2179 (2011).
[6] Rubio-Romero, Gámez & Carrillo-Castrillo, *Analysis of the safety conditions of scaffolding on construction sites*, 55 Safety Sci 160, 160 (2013)
[7] Sawacha, Naoum & Fong, *Factors affecting safety performance on construction sites*, 17(5) Int'l J Prop Mgt 209, 209 (1999); Whitaker, Graves and McCann, *Safety with access scaffolds: Development of a prototype decision aid based on accident analysis*,

As of 2000, the mortality rate in the construction industry was the third highest among all major industries in the United States, with rates of 15.2 per 100,000 workers.[9] Falls on construction sites are the leading cause of death in the industry (36% in private industry in 2012).[10]

In the United States, the National Institute of Occupational Health and Safety (NIOSH) compiles data on work-related injuries. www.niosh.gov. The most recent data are from 2014.[11] The construction industry reported a total of 9,940 nonfatal injuries from falling.[12]

"Falls from heights" consistently appears as the leading cause of construction-related injuries. In 2014, for example, NIOSH recorded a total of 428 fatal falls "to a lower level."[13] The total of fall-related occupational injuries treated was 454,200 ± 65800.[14] As a leading study noted, "occupational falls have been identified as the most

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34 J Safety Res 249, 249 (2003). The incidence rate of nonfatal injuries among construction workers is nearly 40% higher than that for all private sector workers combined and is the highest for any industry. Rivara & Thompson*, Prevention of falls in the construction industry: Evidence for program effectiveness*, 18 Am J Preventive Med 423, 423 (2000) (citations omitted).

[8] See also, e.g., Rozenfeld, Sacks, Rozenfeld & Baum, *Construction job safety analysis*, 48 Safety Sci 491, 491 (2010) ("In almost every country in the world, the construction industry stands out among all other industries with disproportionate numbers of severe and fatal accidents") Törner & Pousette, *Safety in construction – a comprehensive description of the characteristics of high safety standards in construction work, from the combined perspective of supervisors and experienced workers*, 40 J Safety Res 399 (2009) (in European Union, the rate of construction injuries leading to over three days' absence from work exceeded 6,000 per 100,000 employees in 2005).

[9] Rivara & Thompson*, supra* at 423.

[10] *National campaign to prevent falls in construction - United States 2014*, 63(16) Morbidity and Mortality Weekly Report 364 (2014).

[11] *Id*.

[12] *Id*. at Table R4, p 3.

[13] www.niosh.gov.

[14] wwwn.cdc.gov.

common cause of fatal injury in the industry."[15] The authors determined that almost half (49.6%) of work-related fatalities from falling occurred in the construction industry.[16] Falls account for approximately one-third of construction accident injuries.[17] Multiple other studies and literature reviews come to similar conclusions.[18]

It should be apparent, then, that any construction worker faces a high degree of risk, simply from his or her type of employment.

(b)

Falls from scaffolds are a particular hazard in the construction trades.

Working on a scaffold or ladder is the most hazardous kind of job within the construction industry.

> While scaffolds vary in complexity, size, and type, they require a number of essential features for structural stability. Foremost among these are proper connections between individual components, stable foundations, internal bracing to prevent lateral movement, correct dimensions between

[15] Cattledge, Hendriks & Stanevich, *Fatal occupational falls in the U.S. construction industry, 1980-1989*, 28(5) Accident Analysis & Prevention 647, 647 (1996).
[16] *Id*. at 649.
[17] Rivara & Thompson *supra* at 423 (citation omitted)
[18] See, e.g., Cemalovic, Rosic & Toromanovic, *Analysis of the causes of occupational injuries and application of preventive measures*, DOI: 10.5455/msm.2016.28.51-52 (2015) (of workers injured in Croatia in 2014, 19.4% were injured by falls from heights); Chi, Chang & Ting, *Accident patterns and prevention measures for fatal occupational falls in the construction industry*, 36 Applied Ergonomics 391 (2005). (in Taiwan from 1995-1997, falls contributed to 30% of work-related fatalities); Dong, Wang & Daw, *Fatal falls among older construction workers*, 54(3) Human Factors 303 (2012) (of fatal work-related falls in the United States, 50% occur in construction "which is disproportionately high given that construction makes up less than 8% of the total workforce"); Kines, *Case studies of occupational falls from heights: Cognition and behavior in context*, 34 J Safety Res 263, 263 (2002). (in Denmark, falls from heights were the leading type of males' reported lost-time serious injury incidents); Ohdo, Hino, Takanashi, Takahashi & Toyosawa, *Study on fall protection from scaffolds by scaffold sheeting during construction*, 14 Procedia Engineering 2179, 2179 (2011) (in Japan, approximately 40% of fatal accidents during construction are caused by workers' falls); Rubio-Romero, *supra* at 160 ("about 40% of serious accidents in Spain are caused by falls from height").

components at key points, and almost invariably, secure attachments laterally to a stable supporting structure.[19]

As of 2000, scaffold-related falls – by collapse or fall from scaffold – were the second leading cause of falls, averaging 52 deaths per year (18% of all falls).[20] More than 9,500 workers are injured and 80 killed annually in the United States in scaffold mishaps.[21] In 2000, approximately 12% (734 of 5,915) of fatal occupational injuries were falls; of those, 12% (85) involved scaffolds or staging.[22] In Spain, about 30% of construction fatalities in one study involved falls from temporary devices or structures assembled to work at height.[23] In a study of a construction project in Greece, the authors identified falling from a "ladder, scaffold [or] fixed platform" as "the most serious hazard" in most of the work.[24] In a US study, falls from scaffolds and ladders together accounted for nearly one-third (29.6%) of construction accident fatalities.[25] Other data point to the same result.[26]

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[19] Whitaker et al., *supra*, at 259.
[20] Halperin & McCan, *An evaluation of scaffold safety at construction sites*, 35 J Safety Res 141 (2004)..
[21] *Id*. at 141, citing U.S. Bureau of Labor Statistics, *New data highlight gravity of construction falls: Issues in labor statistics* (Washington, DC: U.S. Government Printing Office, 1996).
[22] *Id.* at 141, citing www.bls.gov.
[23] Rubio-Romero, *supra*, at 160
[24] Aneziris, Topali & Papazoglou, *Occupational risk of building construction*, 105 Reliability engineering and system safety 36, 44-45 (2012).
[25] Cattledge, Hendriks & Stanevich, *supra* at 651.
[26] See, e.g., Dong, Wang & Daw, *supra* at 309 (Table 4) (two thirds [66.0%] of fall fatalities in the construction industry from 1992 - 2008 occurred from a roof, ladder, or scaffold staging; one-third [17% + 16%] were from a ladder or scaffold); Janicak, *Fall-related deaths in the construction industry*, 29(1) J Safety Res 35 (1998) (in 1994, falls from roofs, ladders, and scaffolds accounted for approximately 28.5% of the total fatal work-related events in the construction industry and fatal work-related falls from scaffolding accounted for approximately 20.6% of all fall-related deaths in the construction industry, citing Bureau of Labor Statistics results); Nadhim et al, *supra* at *2 (in 2013, falls from heights accounted for 36.9% of the occupational fatalities in the

In one study, the authors, Halperin and McCan, visited 113 constructions sites in the eastern United States where fixed scaffolding was in use and rated them on a series of safety criteria. Almost one-third (31.6%) were rated "unacceptable," of which almost 75% presented "imminent hazards."[27] Close to a third (27%) had "one or more structural flaws."[28]

A study of a large group of scaffold-related injuries in the UK from 1997-2000 "suggest[ed] widespread inadequacies in the management of safety on site."[29] In 1996, OSHA adopted it current regulations of scaffolds. 29 CFR 1926.451. It is instructive, that a comparison of injury statistics from four years before (1992-1996) and after (1996-2000) the adoption of revisions identified a statistically significant (nonchance) reduction in injuries after the regulations were implemented.[30]

The specific problem of inadequate or incorrect plank placement - the cause of the accident in the *Dancer* case - is appreciable. In an extensive study of 803 cases of

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United States, 31% in the United Kingdom, and 12% in Australia); O'Sullivan, O'Sullivan, Luke & Cusack, *Ladder fall injuries: patterns and cost of morbidity*, 35 Int'l J Care of the Injured 429, 431 (2004) (in Great Britain, "ladders are the second most frequent source of injury involving occupational fall from heights"); Schoenfisch, Lipscomb, Cameron, Adams & Silverstein, *Rates of and circumstances surrounding work-related falls from height among union drywall carpenters in Washington State, 1989–2008*, 51 J Safety Res 117, 121 [Table 2] (2014). (among carpenters falls from scaffolds and ladders were by far the two largest kinds of falls); Smith, Timmons, Lombardi, Mamidia, Matza, Courtney & Perry, *Work-related ladder fall fractures: Identification and diagnosis validation using narrative text*, 38 Accident Analysis & Prevention 973 (2006) (as of 2000, falls from ladders were responsible for 16% of all fatal falls and 8% of non-fatal falls).

[27] *Id*. at 142.

[28] *Id.* at 142-143.

[29] Whitaker et al., *supra*, at 259.

[30] Yassin & Martonik, *The effectiveness of the revised scaffold safety standard in the construction industry*, 42 Safety Sci 921 (2004).

scaffolding accidents resulting in work-related injuries in 1978[31], the authors determined that planks slipping accounted for 16% of the injuries.[32] "Planks breaking or slipping" together were responsible for 24% of the injuries.[33] Halperin and McCan observed "insufficient planking" observed in 72% of scaffolds with "structural flaws."[34]

A construction worker on a scaffold, therefore, is subject to an even greater potential risk than coworkers on the ground.

(c)

Falling from any height presents a "high degree" of risk of injury.

It is basic physics that an unsupported mass will fall at the rate of 32 feet/second[2] and that its impact with the ground will be a function of the distance fallen. "[S]tudies of free falls have demonstrated that height of fall correlates with injury severity and is a good predictor of death."[35]

> Injuries resulting from a fall are due to the sudden deceleration of the body after it hits a surface. Sudden deceleration results in 2 types of injuries: those from direct impact and those from transmitted force. Direct impact injuries result in greater severity of injury, whereas transmitted forces are absorbed by the body's tissues and injure vulnerable distant organs. [36]

In a study of fall patients in Britain from 2007-2008, the authors concluded that "height fallen correlates with [severity of injury] and is a significant predictor of death."[37]

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[31] Fattal, Mullen, Hunt & Lew, *Analysis of scaffolding accident records and related employee casualties* (Washington, D.C.: National institute of Occupational Safety and Health, Department of Health, Education and Welfare, 1980).
[32] Id. at 6 (Table 3.1(D).
[33] Id. at 7. See also id. at 19 (approximately 7% of accidents were caused by structural failure of the platform).
[34] Halperin & McCan, *supra*, 143.
[35] Obeid, Bryk, Lee, Hemmert, Frangos, Simon, Pachter & Cohen, *Fatal falls in New York City*, 37(2) Am J Forensic Med & Pathology 80, 84 (2016).
[36] Id.
[37] Dickinson, Roberts, Kumar, Weaver & Lockey, *Falls from height: injury and mortality*, 158(2) J Royal Army Med Corps 123 (2012)..

"In the group that died the mean height was 16.7 [54.275 feet] (5th floor).".[38] In a 1994 study of fall-related deaths, approximately 20% of all deaths occurred falls from a fall distance of 12 feet or less.[39]

NIOSH's 2014 data indicate that there were 77 fatal falls from heights of 6 feet or less and 96 from heights of 6-10 feet, comprising 40% of the reported fatalities.[40] Falls from distances of 11 to 15 feet caused an additional 15% of fatalities.[41] Other studies illustrate the risks of falling from even a "moderate" height. In a study of 148 fatal falls between 1984 and 1986, where it could be determined how far the victim fell, 14 (9.5%) died from falls of less than 16 feet and 24 (16%) died from falls of 16-20 feet.[42]

Serious nonfatal injuries also result from falls from heights. In a study of 420 patients who fell from heights of over 10 feet, the most frequent injuries were femur, tibia, fibia, and foot fractures.[43] Almost one-third of the subjects (31%) had spinal injuries, three-fourths (76%) of them classified as "serious."[44] As a team of British surgeons concluded, "[e]ven a low height does not preclude the possibility of major injuries."[45]

The Court of Appeals in *Dancer* held that "we think it obvious that an elevation of 14 feet . . . is high enough to contribute substantially to the degree of risk that a falling hazard presents." In *Gilmore v Sorensen Gross Const Co*, unpublished opinion per

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[38] Id.
[39] Janicak, *supra* at 38 (Table 3).
[40] www.niosh.gov at Table A-8, p 4.
[41] Id. Note that these statistics comprise only reports of fatal injuries.
[42] Suruda, Fosbroke & Braddee, *Fatal work-related falls from roofs*, 26 J Safety Res 1, 5 [Table 2] (1995).
[43] Velmahos, Spaniolas, Alam, de Moya, Gervasini, Petrovick & Conn. *Falls from height: Spine, spine, spine!*, 203 J Am Coll Surgeons 605, 606 (2006)
[44] Id.
[45] *Id*. at 608-609.

curiam of the Court of Appeals, issued 3/23/06 (Docket No. 258033), however, a panel of the Court of Appeals decided that a potential fall of 13 feet was only a "moderate" distance that did not constitute "a high risk of harm." The *Gilmore* assessment is unrealistic. The *Dancer* panel was correct. A risk of falling from a height of 14 feet, 13 feet, or even 10 feet or less presents a "high" risk of harm.

(d)

Employees of small subcontractors are at greater risk for fall-related injuries.

It is a rather consistent finding in construction safety research that the probability of injury is inversely related to the size of the employer. In one report, for example, a review of data from 1992 - 2008, the majority of fatal falls by in construction (54.4% overall) occurred in companies with one to 10 employees.[46] In a study of roofing fatalities, the largest percent of deaths from roof falls occurred among employees of the smallest employers.[47] Halperin and McCan, *supra*, reported that safety problems were significantly more likely to be observed at sites with fewer than ten workers employed.[48] In a study of construction accidents in Korea from 1993-1994, companies with fewer than 10 employees had a non-fatal injury rate about three times and death rate two times of those with over 1000 employees.[49] See also Rivara and Thompson, *supra* at 25 (working for a small firm employing ten or fewer workers is a risk factor).

As this Court explained long ago in *Funk v General Motors Corp*, 392 Mich 91, 108; 220 NW2d 641 (1974), "[t]he risks inherent in large-scale construction work justify

[46] Dong, Wang & Daw, *supra* at 306-307; 309, 312.
[47] Dong, Choi, Borchardt, Wang & Largay, *Fatal falls from roofs among U.S. construction workers*, 44 J Safety Res 17, 18 [Table 1] (2013).
[48] Halperin & McCan, *supra* at 144.
[49] Jeong, *Occupational deaths and injuries in the construction industry*, 29(5) Applied Ergonomics 355, 356 (1998).

imposing responsibility on a responsible person to take appropriate precautions." The general contractor is in a better position than the small subcontractor employer to identify, and correct, hazards than endanger workers on the site.

This Court should affirm the Court of Appeals.

RELIEF REQUESTED

Amicus curiae Michigan Association for Justice respectfully asks that this honorable Court AFFIRM the decision of the Court of Appeals.

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